	Non responders mean ± S.D.	Responders mean ± S.D.	P
Improved in FU	25%	53%	0.1892
NYHA	2.47 ± 0.64	1.79 ± 0.81	0.0065
LVEDDI (cm/m2)	4.12 ± 0.53	3.78 ± 0.53	0.0481
RVASF (%)	29.48 ± 11.44	46.58 ± 16.31	0.0039

LVEDDI: LV end diastolic diameter index; RVASF: right ventricle areas shortening fraction.

Conclusion: pts. with less severe heart failure responded to DBT more frequently not only in systolic, but also in diastolic function. These pts. may have a better outcome in tailored medical treatment. Further investigations are needed to clarify the role of a positive response to DBT test as favourable predictive factor.

1025-85 Differential Effects of Exercise and Dobutamine Stress on Regional and Global Left Ventricular Shape

E. Avelar, M. Arsenault, A.K. Costas, N. Masani, N. Pandian. *Tufts – New England Medical Center, Boston, Massachusetts, USA*

The use of stressors to provoke abnormal LV function in patients with ischemic heart disease is well established. We have previously shown that ischemia produces alterations in global and regional LV geometry which can be quantified using Fourier Power Index (PI) and regional curvature analysis (C) and may be of pathophysiological importance. To determine whether the effects of different stressors on LV shape we studied 40 normal subjects, 20 with exercise stress echo (Ex) and 20 who had dobutamine echo (Dob), who achieved target heart rates without evidence of ischemia. End-diastolic and end-systolic LV endocardial contours in apical long axis and two chamber views at baseline and peak stress were digitized and analyzed. *Results: (mean ± SE):* There were no differences in C or PI between groups at baseline. Global shape at peak stress: Fourier analysis of 2 chamber views revealed a more elongated shape in diastole and systole with dobutamine infusion compared to peak exercise (diastolic PI Dob: 27 ± 2 vs Ex 19 ± 2 and, systolic PI Dob: 51 ± 4 vs 40 ± 2; both $p < 0.05$). In the long axis, PI showed more elongation with dobutamine than exercise during systole (Dob: 49 ± 5 vs Ex: 35 ± 2) but no differences in diastole. Curvature analysis at peak stress revealed reduced curvature of the inferior wall at end-systole only with dobutamine (Dob 0.6 ± 0.4 vs Ex: 2 ± 0.4 $p < 0.05$). *Conclusions:* The physiological effects of exercise and dobutamine stress have distinct effects on regional and global LV shape in normal individuals, probably related to the differences in inotropy, preload and afterload.

1025-86 Prognostic Value of a Negative Stress Echocardiogram for Cardiac Events in Patients Undergoing Renal or Liver Transplantation

P.J. Colon, III, B.J. Copley, F.G. Regenstein, J. Cheirif. *Ochsner Medical Institutions, New Orleans, LA, USA*

Significant resources are devoted to the care of patients (pts) undergoing noncardiac whole organ transplantation. Choosing the optimal modality for cardiovascular risk stratification remains controversial. We hypothesized that a negative stress echocardiogram (stress 2D) could identify pts who could undergo surgery without further cardiovascular evaluation. We retrospectively reviewed the cases of 79 pts who had a *negative* stress 2D and underwent either renal (n = 48, with or without pancreas) or liver (n = 31) transplantation for the occurrence of perioperative cardiac events (cardiac death or myocardial infarction). *Results:* The mean age was 49 ± 11 years with an average of 2.3 ± 1.2 cardiac risk factors (n = 24 with diabetes mellitus; n = 59 with hypertension; n = 2 with known coronary artery disease). Stress 2-D was performed with exercise in 51% and with dobutamine ± atropine in 49%. Target heart rate was achieved in only 40% of the patients with 23% taking beta blocker therapy. No complications occurred as a result of stress 2D in any patient. Mean follow-up for the group was 13.6 ± 8.9 months from transplantation. Myocardial infarction occurred on post-op day #2 in one pt who remains alive at 25 months. Additionally, 6 pts experienced noncardiac deaths due to post-operative complications (n = 5 sepsis/acidosis; n = 1 encephalopathy). *Conclusions:* 1) Stress 2D can be performed safely in pts undergoing evaluation for renal or liver transplantation; 2) A negative stress 2D is associated with an excellent prognosis and thus identifies pts who may safely undergo transplantation without need for further cardiovascular evaluation.

1025-87 Prognostic Impact of Pharmacological Stress Testing: Head to Head Comparison between Echocardiography and Myocardial Perfusion Scintigraphy

T. Forster, A. Varga, J. Mester, O. Fazekas, M. Lázár, M. Csanády, L. Csernay, E. Picano, A. Szent-Györgyi. *University Medical School, Szeged, Hungary, CNR, Institute of Clinical Physiology, Pisa, Italy*

Pharmacological stress testing with either echocardiography or nuclear imaging techniques gained increasing attention in the past decade. The aim of our study was to compare, head to head, the prognostic power of pharmacological stress echocardiography and perfusion scintigraphy. Three-hundred and fifty-five patients (age range 20–82 years) underwent pharmacological stress testing monitored simultaneously with both echocardiography and sestaMIBI SPECT perfusion scintigraphy. The test was performed using dipyridamole (up to 0.84 mg/kg) in 102 and dobutamine (up to 40 μg/kg/min and atropine 1 mg) in 253 patients. Criteria of positivity were new or worsening wall motion abnormality for echocardiography and a transient reversible perfusion defect for scintigraphy. The mean duration of the follow-up was 17 months. Cardiac death, non-fatal myocardial infarction and revascularization (PTCA or CABG) were considered as end-points. There were 5 cardiac deaths, 3 infarctions and 57 revascularization procedures in the follow-up period. The positive predictive value of echocardiography and perfusion scintigraphy was 40% and 32%, respectively. The negative predictive value of echocardiography (90%) was also similar to that of perfusion scintigraphy (92%).

Conclusion: Pharmacological stress cardiac imaging with either echocardiography or perfusion scintigraphy have comparable prognostic yield in patients with suspected or known coronary artery disease.

1025-88 An Optimal Method for Calculating Mitral Valve Area in Patients With Mitral Stenosis by the Flow Convergence Method: In Vitro Study and Clinical Validation

S. Nozaki, A.N. DeMaria, M. Yuba, K. Mizushige, H. Morita, H. Matsuo. *Kagawa Medical University, Kagawa, Japan, University of California at San Diego, San Diego, CA, USA*

The aim of this study was to determine the most suitable aliasing velocity/distance combination for applying the hemispheric flow convergence (FC) method for calculating mitral valve area (MVA) in patients with mitral stenosis. In vitro study, the maximal flow rate (Q [ml/s]) was calculated using the hemispheric FC equation $Q = 2\pi * R^2 * AV * (\phi/180)$, where R (cm) is the maximal radius of the FC region, AV is the aliasing velocity, and $\phi/180$ is a factor accounting for the inflow angle (ϕ). A total of nine different flows were generated in an in vitro model with a sharp edged circular orifices of 0.3–1.0 cm^2. We used both planar and funnel shaped inlet to examine the effect of boundary geometry. MVA (cm^2) was calculated according to the continuity equation MVA = Q/V, where V (cm/s) is the peak orifice velocity by the continuous-wave Doppler. In 14 patients with typical rheumatic mitral stenosis selected for image quality suitable for quantification, we measured MVA by planimetry using two dimensional echocardiography. The instrument (EUB-165A) was capable of altering AV in 1.0 cm/s increments by post processing. Both in vitro and clinical study, MVA was progressively underestimated with increasing AV and decreasing R. Although the centerline velocity/distance profile was different between planar and funnel inlet, the most suitable AV existed which results in a R of 1.0 cm. The best fit was obtained in vitro if MVA is corrected by contraction coefficient (0.64). MVA estimated by FC method at an R of 1.0 cm showed a good agreement with MVA by planimetry in patients with mitral stenosis ($r = 0.96$, SEE = 0.22 cm^2). This study indicated an optimal method for the accurate estimation of mitral valve area using the flow convergence method in patients with mitral stenosis.

1025-89 Echocardiography Has Reduced the Need of Cardiac Catheterization in Patients With Aortic Stenosis Prior to Aortic Valve Surgery

A.D. Popović, A.N. Nešković, M.S. Lauer [1], D.M. Cosgrove, III [1], W.J. Stewart [1], J.D. Thomas [1]. *Dedinje Cardiovascular Institute, Belgrade University Medical School, Belgrade, Yugoslavia, [1] Cardiovascular Imaging Center, Departments of Cardiology and Cardiothoracic Surgery, The Cleveland Clinic Foundation, Cleveland, OH, USA*

In order to assess the likelihood of cardiac catheterization in pts with aortic stenosis undergoing aortic valve surgery, we have analyzed 2789 surgical procedures at the Cleveland Clinic from 1986 to 1994. Statistical analysis was performed using multiple logistic regression model with preoperative cardiac catheterization as a dependent variable and patient age and sex, date of surgery, type of surgery (valve surgery with or without CABG), and